REMARKS

Applicant intends this response to be a complete response to the Examiner's **21 May 2010** Non-Final Office Action. Applicant has labeled the paragraphs in his response to correspond to the paragraph labeling in the Office Action for the convenience of the Examiner.

Interview Summary

Applicant and Applicant's attorney met with the Examiner at the Patent Office on June 29, 2010. During the meeting, Applicant and Applicant's attorney pointed out that the specification did indeed support bonding directly between the strands of one film and the strands of the other film to form spot bonds. Applicant and Applicant's attorney showed the Examiner express teaching in the specification, Applicant and Applicant's attorney have listed these express teachings in the response to the specification and 112 first paragraph objection/rejections.

Applicant and Applicant's attorney also discussed the prior art and how the prior art did not disclose, teach or generally suggest to an ordinary artisan to try to form the cross-laminate of the invention. The presently claimed cross-laminate include films having a main layer, a bonding layer and arrays of strands all co-extruded so that the films have a main layer, a bonding layer on at least one surface and arrays of strands on the outer surface of the bonding layer. The presently claimed cross-laminate is then formed by laminating the two films so form a bonding pattern having three distinct bond types – spot bonds, line bonds, and area bonds – having different bond strengths, with the spot bonds being the strongest bonds.

The Examiner asked Applicant and Applicant's attorney to prepare the table showing the features that the prior art did not disclose or if disclosed, is different from the present invention. Applicant and Applicant's attorney submit such a table with this response.

Preliminary Statement

Applicant points out that the cross-laminate of the present claims differ from any of the laminates disclosed in the cited prior art in a number of characteristics: (1) cross-laminates formed from co-extruded structured films, (2) the co-extruded structured films include a main layer, a bonding layer co-extruded on one or both of the main layer surfaces and arrays of strands co-extruded on the outer surface of the bonding layer, and (3) a bonding pattern, formed during lamination, including three distinct bond types – (a) spots bonds (bonds directly between strand on one film and strands on the other film – bonds at the intersections of film A strands and film B strands, (b) line bonds – bonds between strands of one film and the bonding layer of the other film, and (c) area bonds – bonds between the bonding layer of one film and the bonding layer of the other film.

All features of the laminates of the present invention are formed during extrusion. There are

no separate structures that are coated and/or embedded within a polymeric material. The strands are co-extruded onto the bonding layer and the bonding layer is co-extruded onto the main layer, all performed during the extrusion process. Thus, as the film is being formed, all layers are extruded in one process – they are all co-extruded. Thus, there are no separate components such as reinforcing fibers (scrims or grids or nets) that become embedded or encased in a polymeric material – generally an adhesive.

Three distinctly different bonds are formed between the two co-extruded films during lamination. The first bond type is formed between strands on one film and strands on the other film (spot bonds, direct strand to strands bonds at crossing spot). The second bond type is formed between a strand on one film and a bonding layer of the other film (line bonds, strand to bonding layer bonds). The third bond type is formed between a bonding layer of one film and a bonding layer of the other film (areas bonds, bonding layer to bonding layer bonds, where the bonding layers are devoid of strands). While the bond strengths of each bond type can be adjusted to some extent, the bond strength of the first bond type are always greater than the bond strength of the third bond type due to the choice of the polymers making up the strands and making up the bonding layer. The bond strength of the second bond type depends on the polymer composition of the strand and the bonding layer, but is generally between the bond strength of the first bond type and the third bond type.

The strands are thin as shown in Figure 1.

Applicant also note that the Examiner is relying on teaching of a minimum of four references and up to six references. It seems to Applicant that anything that takes so many references, would be non-obviousness on its face.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/22/2010 has been entered.

Applicant acknowledges the acceptability of the RCE.

Claims

2. Claims 123-125 and 128-148 are pending.

Applicant acknowledges the pendency of the claims.

WITHDRAWN OBJECTIONS/REJECTIONS

3. All objections/rejections of record in the Office action mailed 10/20/2009 have been withdrawn due to Applicant's amendments in the Paper filed 3/22/2010.

Applicant acknowledges the Examiner withdrawal of all prior objections and rejections.

NEW OBJECTIONS

Specification

4. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(0).

The Examiner states and contends as follows:

> Correction of the following is required: the phrases "a first bonding pattern formed between the first surface of the film A and the first surface of the film B comprising: first bonds comprising spot-bonds formed directly points of intersection between the film A first strands and the film B first strands" in claim 123, lines 33-36 and "fourth bonds comprising spot-bonds formed directly between the film A third strands and the film C first strands, where the film A first strands intersect the film C first strands" in claim 147, lines 27-28 lack textual support with the Specification. If Applicant believes support is present in canceled claim 24 or the Figures then Applicant is advised to amend the text of the Specification while being careful not to add new matter.

Applicant disagrees with the Examiner assessment of the teaching of the Specification lacks textual teaching to support: "a first bonding pattern formed between the first surface of the film A and the first surface of the film B comprising: first bonds comprising spot-bonds formed directly points of intersection between the film A first strands and the film B first strands" in claim 123, lines 33-36 and "fourth bonds comprising spot-bonds formed directly between the film A third strands and the film C first strands, where the film A first strands intersect the film C first strands" in claim 147, lines 27-28.

Support for the claims terms "spot-bonds" formed "directly at" points of intersection of strands can be found at least at the following original claims or paragraphs of the published application number 20050095411: original claims 2 (spot bonding), 9-10 (spot bonding), 24 (spot bonding), 28 (spot bonding), 29 (directly), 48 (directly); [0075] (directly), [0047-0049] (spot bonding), [0054] (spot bonding), [0056] (spot bonding), [0064] (spot bonding), [0122-0123] (spot bonding), [0153] (spot bonding) and [0170] (spot bonding).

Thus, there is clear and concise support for directly bonding at spot and stop-bonding. Applicant, therefore, respectfully requests withdrawal of this rejection.

NEW REJECTIONS

Claim Rejections - 35 USC § 112

6. **Claims 123-125 and 128-148** stand rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

The Examiner states and contends as follows:

> The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The phrases "a first bonding pattern formed between the first surface of the film A and the first surface of the film B comprising: first bonds comprising spot-bonds formed directly between the film A first strands and the film B first strands" in claim 123, lines 33-36 and "fourth bonds comprising spot-bonds formed directly between the film A third strands and the film C first strands, where the film A first strands intersect the film C first strands" in claim 147, lines 27-28 are new matter. The Specification does not disclose direct spot bonds.

Support for the claims terms "spot-bonds" formed "directly at" points of intersection of

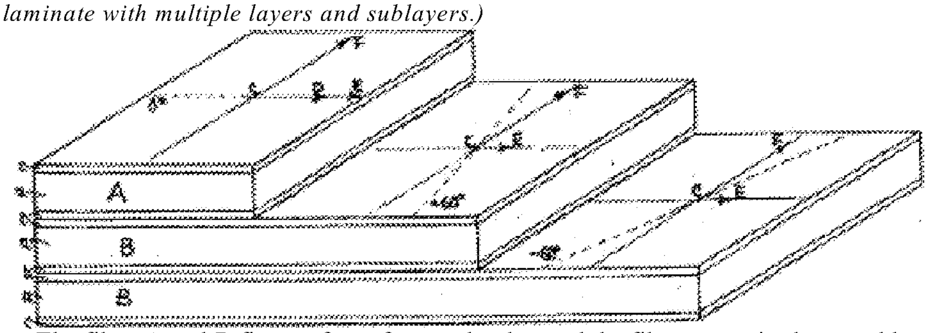
strands can be found at least at the following original claims or paragraphs of the published application number 20050095411: original claims 2 (spot bonding), 9-10 (spot bonding), 24 (spot bonding), 28 (spot bonding), 29 (directly), 48 (directly); [0075] (directly), [0047-0049] (spot bonding), [0054] (spot bonding), [0056] (spot bonding), [0064] (spot bonding), [0122-0123] (spot bonding), [0153] (spot bonding) and [0170] (spot bonding).

Thus, there is clear and concise support for directly bonding at spot and stop-bonding. Applicant, therefore, respectfully requests withdrawal of this rejection.

Claim Rejections - 35 USC § 103

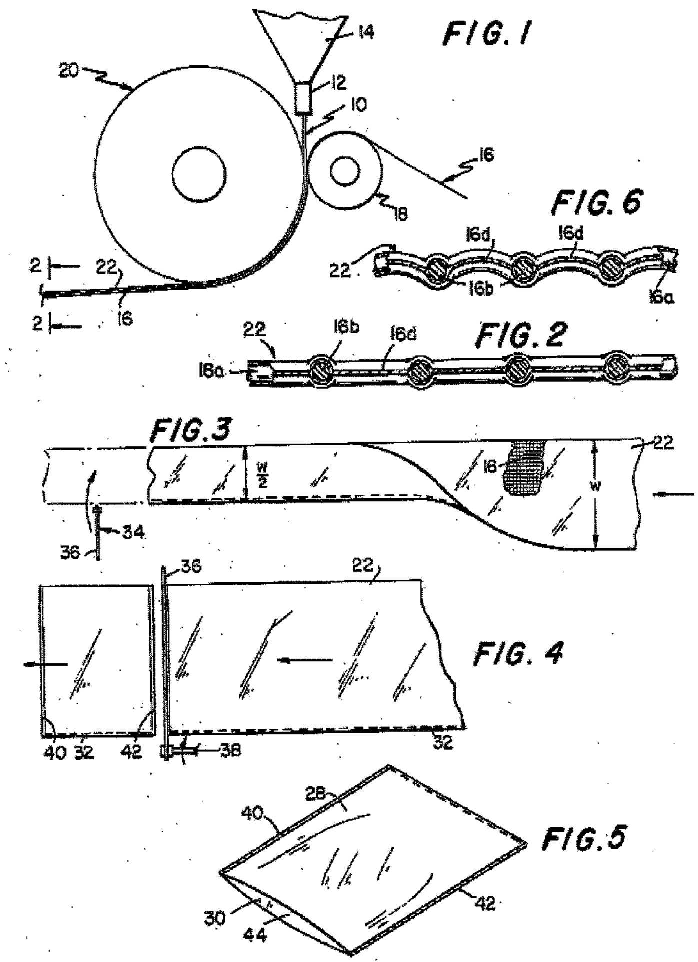
7. **Claims 123-125, 129-130, 136-137, 143-144 and 147-148** stand rejected under 35 U.S.C. 103(a) as being unpatentable over Rasmussen (WO 01/96102) in view of Hendrickson (US 4,087,577), Wynne et al. (US 5,328,743) and Lappala (US 2,851,389).

The Examiner states and contends as follows:

> The language regarding the strand limitations in independent claim 123 is broad with minimal specificity distinguishing the strands as reinforcing strands, non reinforcing strands, ribs, striations, streaks, etc. or whether the strands are flat, round, etc. Analysis and evidence is lacking regarding any structural differences for a laminate with strands that are coextruded as opposed to strands that are embedded in a polymeric structure.
>
> Rasmussen ('102) teaches a cross-laminate comprising a first coextruded film having a film main direction of uniaxial unbalanced biaxial molecular orientation *(See p. 5, ll. 26-31 and FIG-2, cross laminate with multiple layers and sublayers.)*
>
> 
>
>
> The films A and B first surfaces face each other and the films comprise heat seal layers #c, main layers #a and lamination layers #b, with individual compositions bonded to each other in the laminate as illustrated in FIG-2 as well as bonding of the layers when the layers are wrapped such as in a gusseted tube. Since the layers have different compositions the bonding and adhesive strengths are different. Since some portions of the laminate are bonded at the seam there are regions of some of the laminate substrates that have additional bonding that is not present in other regions *(See p. 2, ll. 42-58, p. 11, l.25 to p. 12, l. 14, p. 5, ll. 26-31, p. 6, ll. 1-9 and FIG-2.)* The Examiner interprets continuous to mean anything such as color, width, length, thickness, surface property, etc.. The claims do not set forth whether the main layers are the outermost or innermost surfaces of the laminate or just one is on an outermost surface. The strands are interpreted as being in either the same or different planes from one another. There is no apparent difference in the structure between strands that are coextruded and those that are not.), however, fails to expressly disclose wherein the various layers are continuous, having a plurality of arrays of strands in films A, Band C wherein a separation between adjacent arrays of film A first strands is between 2 mm and 8 cm and wherein a separation between adjacent arrays of film B first strands is between 2 mm and 8 cm, wherein the first bonds comprise spot-bonds with the bonding being different between the various layers and regions within the layer, wherein the film A first strands intersect the film B first strands and film C first strands, a thickness increase of the films A and B at their respective array locations being at most 20%/(10%) of a film thickness of the films A and B in adjacent regions of the films A and B devoid of their respective strands, the first and second polymer materials and where the strands have a thickness of no more than 30% of a thickness of their respective films at their thickest.
>
> However, Rasmussen ('102) teaches where the structure is made into bags, wherein the layers are continuous when wrapped such as with a gusseted tube and as the layers progress to the opening(s)

in the gusseted tube until the layers terminate. Each layer clearly has a pattern whether it is substantially the same, including wave-shaped web with stabilized waves *(See p. 8, II. 28-32.)*, within the layer or upon the bonded and non-bonded areas with various bonding strengths and the additional layers and or/markings will clearly be applied at various regions in a continuous manner to provide for the desired messages *(See p. 6, ll. 1-9.)*. Pigments are added to the various compositions providing for further patterns *(See p. 11, l. 25 to p. 12, l. 14.)* for the purpose of providing a pleasing, strong bag for containing the packaged goods *(See p. 6, ll. 1-9.)*.

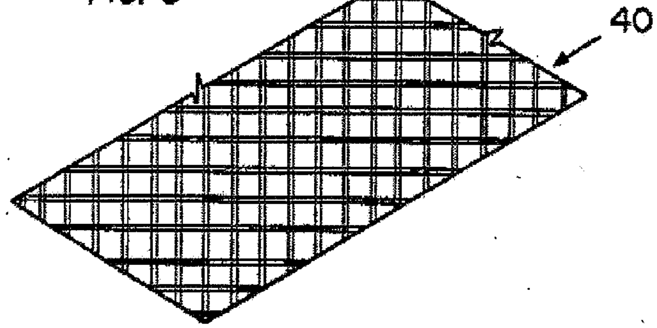
Hendrickson ('577) teaches a polymeric bag reinforced with a two sets of crossing strands of a first polyolefin polymer that may be woven or nonwoven into a grid while the polymeric sheets are made from a different polyolefin polymer, thus, providing for different bonding properties between the sets of strands, top and bottom sheets and between the strands and the sheets *(See col. 3, l. 32 to col. 6, l. 35 and FIGs 2-6, with a bag as illustrated in FIG-5 and strands #16 illustrated in FIGs 2-3 and 6. The strands are clearly capable of being coextruded along with the film without there being any apparent structural difference between coextruded and non coextruded strands. When the strands are crossed they are capable of being spot welded.)*



and the thickness of the film and at the location of the strands being the same as at the location between the strands *(See col. 4, l. 57 to col. 5, l. 1.)* for the purpose of providing bags with improved strength and capable of accommodating larger payloads *(See col. 6, ll. 36-61.)*.

Wynne ('743) teaches a polymeric material *(See FIG-3, #40 and col. 5, ll. 5-59.)*

FIG. 3



with multiple polyolefin polymeric layers being reinforced with a grid of crossing strands #54A and #548 and #30-32 made of different materials *(See FIGs 4 and 2.)*

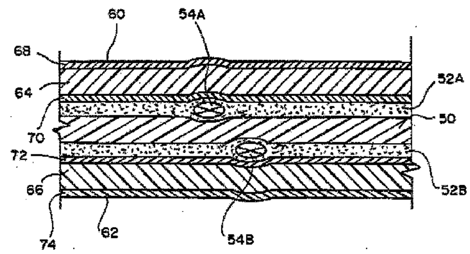
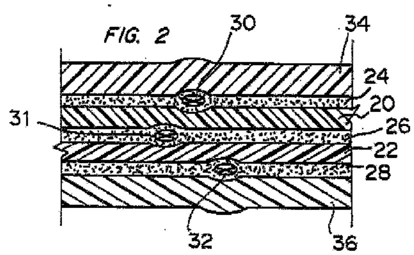


FIG. 4

FIG. 2



usable as a packaging material that can be seamed into bags *(See col. 5, ll. 16-59.)* for the purpose of providing a strong, reinforced protective material *(See col. 5, ll. 44-59.)*.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time Applicant's invention was made to provide the above structure with spot welded strands, with a continuous and patterned structure as taught by Hendrickson ('577) and Wynne ('743) and obviously taught by Rasmussen ('102) in Rasmussen ('102) in order to provide a strong material capable protecting and accommodating larger payloads.

The phrase "where the strands have a thickness of no more than 30% of a thickness of their respective films at their thickest" in claim 123, lines 45-46 is not limiting since it includes values of zero.

The phrases "adapted to ***" in claim 124, line 3 and claim 143, line 2 do not limit the claims' scope since said language does not limit the claim to a particular structure (See MPEP 2111.04).

For the purposes of searching for and applying prior art under 35 U.S.C. 102 and 103, absent a clear indication in the specification or claims of what the basic and novel characteristics actually are, "consisting essentially of' will be construed as equivalent to "comprising". See, e.g., PPG, 156 F.3d at 1355, 48 USPQ2d at 1355 ("PPG could have defined the scope of the phrase consisting essentially of for purposes of its patent by making clear in its specification what it regarded as constituting a material change in the basic and novel characteristics of the invention."). MPEP 2111.03 Also, If an applicant contends that additional steps or materials in the prior art are excluded by the recitation of "consisting essentially of," applicant has the burden of showing that the introduction of additional steps or components would materially change the characteristics of applicant's invention. In re De Lajarte, 337 F.2d 870, 143 USPQ 256 (CCPA 1964). The "consists essentially of' language is used in claim 141, line 2.

Applicant refers the Examiner to the attached table that addresses each rejection and each

claims on a near element by element basis and set forth features not taught in the references. As stated in the table, the combination of Rasmussen (102), Hendrickson (577), Wynne et al. (743), and Lappala (389) does not disclose arrays of co-extruded strands, co-extruded on the surfaces of facing bonding layers of two films A&B or A&C in a laminate. While Hendrickson (577), Wynne et al. (743), and Lappala (389) do include strands, the strands are either part of a scrim or a grid. The strands are not co-extruded as part of the films so that the resulting films, prior to lamination, include a main layer, at least one bonding layer extruded on a top or bottom surface of the main layer, and arrays of strands extruded on the surface of the bonding layer. It is this unique feature that permits a bonding pattern to be formed after lamination that includes three distinct bond types: strand to strand bonding – spot bonds, strand to bonding layer bonding – line bonds, and bonding layer to bonding layer bonding – region bonds. The combination discloses at most two bonding types, but not three and no stand to strand bonding – spot bonds, where the spot bonds are the strongest bonds in the pattern.

Because the combination of Rasmussen (102), Hendrickson (577), Wynne et al. (743), and Lappala (389) does not disclose, teach or even fairly direct an ordinary artisan to form arrays of co-extruded strands on co-extruded films or to form a laminate having a bonding pattern of the present invention, the combination cannot render the present claims 123-125,129-130,136-137,143-144 and 147-148 obvious.

8. **Claim 128, 131-135 and 138-141** stand rejected under 35 U.S.C. 103(a) as being unpatentable over Rasmussen (WO 01/96102) in view of Hendrickson (US 4,087,577), Wynne et al. (US 5,328,743), Lappala (US 2,851,389) and Cederblad et al. (US 6,204,207).

The Examiner states and contends as follows:

> Regarding **claim 128**, Rasmussen (102), Hendrickson ('577), Wynne ('743) and Cederblad (,207) teach the laminate discussed above, however, fail to expressly disclose where a collective area of the film A first strands and film B first strands comprises no more than 60% of a surface area of their respective film sides.
>
> However, Lappala ('389) teaches a strand reinforced layered structure where any suitable diameter strand may be used (See col. 2, I. 45, any suitable diameter can be used.), which clearly changes the above area ratio. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of Applicant's invention to select a strand with a diameter that provides the above area ratio as taught by Lappala ('389) for the purpose of providing a laminate that is light and strong *(See col. 1, ll. 25- 28.)*.

Applicant reassert their arguments relative to the Rasmussen (102), Hendrickson (577), Wynne et al. (743), and Lappala (389) combination here, and note that the additions of Cederblad et al. (207) does not cure the deficiencies of this combination, regardless of the surface area covered by the arrays of strands.

Cederblad et al. (207) does disclose strands, but the strands are different. One is a high melting strand and one is a low melting strand. During lamination, the low melting strand flows into the mat – Cederblad et al. (207) does not relate to films. The bond formed between the high melting strands and low melting strand is weak, in fact, the preferred structure is to have the low melting

strand to be over the high melting strand so that the tensile strength of the low melting strand will afford superior bonding of the high melting strands to the mat. Thus, Cederblad et al. (207) actually teaches directly away from the present invention, where the strand to strand bonding represents the strongest bonds in the bonding pattern.

Because the combination of Rasmussen (102), Hendrickson (577), Wynne et al. (743), Lappala (389) and Cederblad et al. (207) does not disclose, teach or even fairly direct an ordinary artisan to form arrays of co-extruded strands on co-extruded films or to form a laminate having a bonding pattern of the present invention, the combination cannot render the present claim 128 obvious.

The Examiner states and contends as follows:

> Regarding **claims 131-133** Rasmussen (102), Hendrickson (,577), Wynne ('743) and Cederblad (,207) teach the laminate discussed above, however, fail to expressly disclose wherein a volume of the film A strands and the film B strands is not greater than 15%/(10%)/(5%) of a volume of their respective films.
>
> However, Lappala ('389) teaches that any suitable diameter strand may be used *(See col. 2, l. 45, any suitable diameter can be used.)*, which clearly changes the volume. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of Applicant's invention to select a strand with a diameter that provides the above volume as taught by Lappala ('389) for the purpose of providing a laminate that is light and strong (See col. 1, II. 25-28.).

Applicant reassert their arguments relative to the Rasmussen (102), Hendrickson (577), Wynne et al. (743), and Lappala (389) combination here, and note that the additions of Cederblad et al. (207) does not cure the deficiencies of this combination, regardless of the volume of the arrays of strands.

Cederblad et al. (207) does disclose strands, but the strands are different. One is a high melting strand and one is a low melting strand. During lamination, the low melting strand flows into the mat – Cederblad et al. (207) does not relate to films. The bond formed between the high melting strands and low melting strand is weak, in fact, the preferred structure is to have the low melting strand to be over the high melting strand so that the tensile strength of the low melting strand will afford superior bonding of the high melting strands to the mat. Thus, Cederblad et al. (207) actually teaches directly away from the present invention, where the strand to strand bonding represents the strongest bonds in the bonding pattern.

Because the combination of Rasmussen (102), Hendrickson (577), Wynne et al. (743), Lappala (389) and Cederblad et al. (207) does not disclose, teach or even fairly direct an ordinary artisan to form arrays of co-extruded strands on co-extruded films or to form a laminate having a bonding pattern of the present invention, the combination cannot render the present claims 131-133 obvious.

The Examiner states and contends as follows:

> Regarding **claims 134-135**, Rasmussen (102), Hendrickson (,577), Wynne ('743) and Cederblad (,207) teach the laminate discussed above, however, fail to expressly disclose the separation

> is between 2 mm and 40 mm/(at the highest 20 mm).
>
> However, Lappala ('389) teaches that any suitable pattern may be used *(See col. 2, l. 49-51, any suitable pattern.)* for the purpose of providing a laminate that is light and strong *(See col. 1, ll. 25-28.)*.
>
> Therefore, it would have been obvious to a person of ordinary skill in the art at the time of Applicant's invention to select a suitable pattern that provides the above separation as taught by Lappala ('389) in Rasmussen (102) in order to provide a laminate that is light and strong.

Applicant reassert their arguments relative to the Rasmussen (102), Hendrickson (577), Wynne et al. (743), and Lappala (389) combination here, and note that the additions of Cederblad et al. (207) does not cure the deficiencies of this combination, regardless of the separation between the arrays of strands.

Cederblad et al. (207) does disclose strands, but the strands are different. One is a high melting strand and one is a low melting strand. During lamination, the low melting strand flows into the mat – Cederblad et al. (207) does not relate to films. The bond formed between the high melting strands and low melting strand is weak, in fact, the preferred structure is to have the low melting strand to be over the high melting strand so that the tensile strength of the low melting strand will afford superior bonding of the high melting strands to the mat. Thus, Cederblad et al. (207) actually teaches directly away from the present invention, where the strand to strand bonding represents the strongest bonds in the bonding pattern.

Because the combination of Rasmussen (102), Hendrickson (577), Wynne et al. (743), Lappala (389) and Cederblad et al. (207) does not disclose, teach or even fairly direct an ordinary artisan to form arrays of co-extruded strands on co-extruded films or to form a laminate having a bonding pattern of the present invention, the combination cannot render the present claims 134-135 obvious.

The Examiner states and contends as follows:

> Regarding **claims 138-140**, Rasmussen (102), Hendrickson ('577) and Wynne ('743) teach the laminate discussed above, however, fail to expressly disclose wherein an average melting point of the third polymer material and average melting point of the sixth polymer materials are at least about 10°C/(15°C) /(20°C) lower than an average melting point of the first polymer material and an average melting point of the fourth polymer material.
>
> However, Cederblad (,207) teaches a laminate with strands where the layers comprise a copolymer of ethylene having a melting point or a melting range within the temperature range of 50 - 100°C *(See col. 12, l. 42 wherein the melting point is 67°C /152 of.)* and a strand reinforced polymer structure where the average melting point of the polymer material of the layers of the films differ *(See col. 12, ll. 38-53.)* for the purpose of providing firm and light bonds *(See col. 6, ll. 60-67.)*.
>
> Therefore, it would have been obvious to one of ordinary skill in the art at the time Applicant's invention was made to provide strands with melting points below that of the films as taught by Cederblad (,207) in Rasmussen (102) in order to produce a laminate with firm and light bonds.

Applicant reassert their arguments relative to the Rasmussen (102), Hendrickson (577), Wynne et al. (743), and Lappala (389) combination here, and note that the additions of Cederblad et al. (207) does not cure the deficiencies of this combination.

Cederblad et al. (207) does disclose strands, but the strands are different. One is a high melting strand and one is a low melting strand. During lamination, the low melting strand flows into the mat – Cederblad et al. (207) does not relate to films. The bond formed between the high melting

strands and low melting strand is weak, in fact, the preferred structure is to have the low melting strand to be over the high melting strand so that the tensile strength of the low melting strand will afford superior bonding of the high melting strands to the mat. Thus, Cederblad et al. (207) actually teaches directly away from the present invention, where the strand to strand bonding represents the strongest bonds in the bonding pattern.

Because the combination of Rasmussen (102), Hendrickson (577), Wynne et al. (743), Lappala (389) and Cederblad et al. (207) does not disclose, teach or even fairly direct an ordinary artisan to form arrays of co-extruded strands on co-extruded films or to form a laminate having a bonding pattern of the present invention, the combination cannot render the present claims 138-140 obvious.

The Examiner states and contends as follows:

> Regarding **claim 141**, Rasmussen (102), Hendrickson ('577), Wynne ('743) and Cederblad ('207) teach the laminate discussed above, however, fail to expressly disclose wherein the main layer of each of the two films A and B consists essentially of polyethylene or polypropylene.
>
> However, Lappala ('389) teaches wherein the main layer of each of the two films A and B is polyethylene *(See col. 2, l. 31 and ll. 66-67.)* for the purpose of providing a laminate that is light and strong *(See col. 1, ll. 25-28.)*.
>
> Therefore, it would have been obvious to one having ordinary skill in the art at the time Applicant's invention was made to provide polyethylene layers as taught by Lappala ('389) in Rasmussen (102) in order to provide a laminate that is light and strong.

Applicant reassert their arguments relative to the Rasmussen (102), Hendrickson (577), Wynne et al. (743), and Lappala (389) combination here, and note that the additions of Cederblad et al. (207) does not cure the deficiencies of this combination, regardless of the composition of the main layers of the films.

Cederblad et al. (207) does disclose strands, but the strands are different. One is a high melting strand and one is a low melting strand. During lamination, the low melting strand flows into the mat – Cederblad et al. (207) does not relate to films. The bond formed between the high melting strands and low melting strand is weak, in fact, the preferred structure is to have the low melting strand to be over the high melting strand so that the tensile strength of the low melting strand will afford superior bonding of the high melting strands to the mat. Thus, Cederblad et al. (207) actually teaches directly away from the present invention, where the strand to strand bonding represents the strongest bonds in the bonding pattern.

Because the combination of Rasmussen (102), Hendrickson (577), Wynne et al. (743), Lappala (389) and Cederblad et al. (207) does not disclose, teach or even fairly direct an ordinary artisan to form arrays of co-extruded strands on co-extruded films or to form a laminate having a bonding pattern of the present invention, the combination cannot render the present claim 141 obvious.

9. **Claim 142** stands rejected under 35 U.S.C. 103(a) as being unpatentable over Rasmussen

(WO 01/96102) in view of Hendrickson (US 4,087,577), Wynne et al. (US 5,328,743), Lappala (US 2,851,389), Cederblad et al. (US 6,204,207), Rasmussen (US 4,039,364) and Velazquez (US 5,614,297).

The Examiner states and contends as follows:

> Rasmussen (,102), Hendrickson ('577) and Wynne ('743) teach the laminate discussed above, and Rasmussen ('364) teaches a laminate wherein the main layers are made from HOPE, LLOPE or a blend of the two (See col. 13, II. 3-7.) and the strands in the first surface layers of the films is a polymer made from a copolymer of ethylene (See col. 13, II. 11-30.), however, fail to expressly disclose wherein the bonding layers comprise LLOPE in admixture with 5 - 25% of a copolymer of ethylene having a melting point or a melting range within the temperature range of 50 - 80°C.
>
> However, Velazquez (,297) teaches a polyolefin stretch film having bonding layers comprising LLOPE in admixture with 5 - 25% of a copolymer of ethylene having a melting point or a melting range within the temperature range of 50 - 80°C (See col. 8, ll. 26-47 and col. 3, I. 46.) for the purpose or providing a film that can be laminated with one or more films (See col. 6, ll. 13-17.).
>
> Furthermore, Cederblad (,207) teaches wherein the layers comprising a copolymer of ethylene having a melting point or a melting range within the temperature range of 50 - 80°C (See col. 12, I. 42 wherein the melting point is 67°C /152°F.) for the purpose of forming firm bonds (See col. 6, I. 63.).
>
> Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide a laminate with a surface layer of LLDPE and ethylene with the above melting point range and the above strands as taught by Velazquez ('297) and Cederblad ('207) in Rasmussen ('102) in order to provide a bondable laminate as described above.

Applicant reassert their arguments relative to the Rasmussen (102), Hendrickson (577), Wynne et al. (743), Lappala (389) and Cederblad et al (207) combination here, and note that Rasmussen (364) and Velazquez (297) both disclose a three layer film formed form a single extrusion process. While all of the reference disclose PE and PP, either generally or specifically, having varying melting points, the addition of Rasmussen (364) and Velazquez (297) to not cure the numerous deficiencies of the combination of Rasmussen (102), Hendrickson (577), Wynne et al. (743), Lappala (389) and Cederblad et al (207). None of these references alone or in any combination disclose, teach or even suggest to an ordinary artisan to form films having a main layer, a bonding layer on at least one surface of the main layer and strand on the outer surface of the bonding layer, where all the components (main layer, bonding layer, and strands) are formed in a co-extrusion process. Nor do any of these references alone or in any combination disclose, teach or even suggest to an ordinary artisan to laminate the co-extruded film so that the stranded surfaces face each other during lamination to form a bonding pattern having three distinct bond types – spot bonds directly between crossing strands, line bonds between the strands of one film and the bonding layer of another film and area bonds between areas of the two films, where the areas are devoid of strands. Because of the polymers that make up the strands and the bonding layers, the three bond types have different strength with the spot bonds the strong than the area bonds, and the line bonds between the other two bond strengths. This unique bonding pattern produces a cross-laminate with unique properties are not disclose in any combination of the references regardless of the types of polymers the references disclose.

Because the combination of Rasmussen (102), Hendrickson (577), Wynne et al. (743), Lappala (389), Cederblad et al. (207), Rasmussen (364) and Velazquez (297) does not disclose, teach

or even fairly direct an ordinary artisan to form arrays of co-extruded strands on co-extruded films or to form a laminate having a bonding pattern of the present invention, the combination cannot render the present claim 142 obvious.

10. **Claims 145-146** stand rejected under 35 U.S.C. 103(a) as being unpatentable over Rasmussen (WO 01/96102) in view of Hendrickson (US 4,087,577), Wynne et al. (US 5,328,743), Lappala (US 2,851,389) and Johnston (US 3,340,128).

The Examiner states and contends as follows:

> Regarding claim 145, Rasmussen (102), Hendrickson ('577), Wynne ('743) and Lappala ('389) teach the laminate discussed above, however, fail to expressly disclose wherein the polymer material of the strands of at least one of the films A and B includes colored material that makes the colored strands visible through at least one side of the cross-laminate.
>
> However, Johnston ('128) teaches a strand reinforced structure where the polymer material of the strands of at least one of the arrays comprises coloration material in sufficient amount to render the at least one colored layer visible through at least one side of the cross-laminate *(See col. 24, l. 58.)* for the purpose of providing a decorative motif *(See col. 24, ll. 59-60.)*.
>
> Therefore, it would have been obvious to one of ordinary skill in the art at the time of Applicant's invention was made to provide strands with coloration as taught by Johnston ('128) in Rasmussen (102) in order to provide a product having a decorative motif.

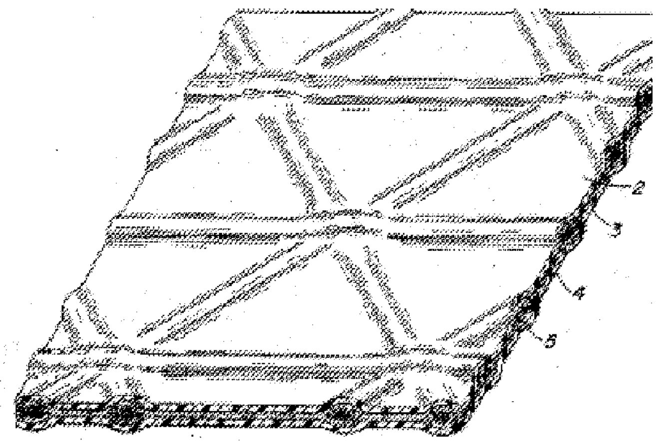
Applicant reassert their arguments relative to the Rasmussen (102), Hendrickson (577), Wynne et al. (743), and Lappala (389) combination here, and note that the Johnston (128) is directed to scrim that can be have a film laminated onto its top and bottom face. The scrim is a yarn made of strands, that can be colored, but the strands are not co-extruded on the surface of a bonding layer that is co-extruded onto a surface of a main layer. The Johnston (128) reference does indeed disclose colored strands, but does not have teaching to address the numerous deficiencies of the Rasmussen (102), Hendrickson (577), Wynne et al. (743), and Lappala (389) combination.

Because the combination of Rasmussen (102), Hendrickson (577), Wynne et al. (743), Lappala (389), and Johnston (128) does not disclose, teach or even fairly direct an ordinary artisan to form arrays of co-extruded strands on co-extruded films or to form a laminate having a bonding pattern of the present invention, the combination cannot render the present claim 145 obvious.

The Examiner states and contends as follows:

> Regarding claim 146, Rasmussen (102), Hendrickson (,577), Cederblad ('207), Wynne ('743) and Johnston ('128) teach the laminate discussed above, however, fail to expressly disclose wherein the cross-laminate has a thickness at its highest of about 0.3 mm, and wherein an exterior surface of the film A is corrugated to form a visible pattern of striations extending in one direction, where a spacing of the striations being at most about 3 mm: the main layer and the bonding layer of the film A are substantially transparent to enable the colored strands to be visible when the laminate is observed from one of the exterior surfaces of the cross-laminate, and a depth of the corrugations is sufficient to impart a three-dimensional effect to the cross- laminate such that the strands appear to be spaced internally from the exterior surface of the film A a distance substantially greater than an actual maximum thickness of the film A.
>
> However, Lappala ('389) teaches a strand reinforced layered structure where the laminate thickness at its thickest is about 0.3 mm *(See col. 3, ll. 34-35 and col. 2, l. 45 wherein the films are less than 0.015 in (0.381 mm).)*, the main layer and the bonding layer of the film A are substantially transparent to enable the colored strands to be visible when the laminate is observed from one of the exterior surfaces of the cross laminate *(See FIG-3, #2.)*, where the spacing of the striations being at most about 3 mm *(See FIG-3, corrugations created by strands.)* the main layer and the bonding layer

of the film A are substantially transparent to enable the colored strands to be visible when the laminate is observed from one of the exterior surfaces of the cross-laminate, and the depth of the corrugations being sufficient to impart a three-dimensional effect to the cross-laminate such that the strands appear to be spaced internally from the exterior surface of the film A a distance substantially greater than an actual maximum thickness of the film A *(See col. 2, l. 7.)*, for the purpose of providing a laminate that is light and strong *(See col. 1, ll. 25-28.)*.



Therefore, it would have been obvious to a person of ordinary skill in the art the time of Applicant's invention to provide such a spacing and configuration as taught by Lappala ('389) in Rasmussen ('102) in order to provide a light and strong laminate.

Applicant reassert their arguments relative to the Rasmussen (102), Hendrickson (577), Wynne et al. (743), and Lappala (389) combination here, and note that the Johnston (128) is directed to scrim that can be have a film laminated onto its top and bottom face regardless of the relative thickness of the scrim strands an the over coats. The scrim is a yarn made of strands, that can be colored, but the strands are not co-extruded on the surface of a bonding layer that is co-extruded onto a surface of a main layer. The Johnston (128) reference does indeed disclose colored strands, but does not have teaching to address the numerous deficiencies of the Rasmussen (102), Hendrickson (577), Wynne et al. (743), and Lappala (389) combination.

Because the combination of Rasmussen (102), Hendrickson (577), Wynne et al. (743), Lappala (389), and Johnston (128) does not disclose, teach or even fairly direct an ordinary artisan to form arrays of co-extruded strands on co-extruded films or to form a laminate having a bonding pattern of the present invention, the combination cannot render the present claim 146 obvious.

Answers to Applicant's Arguments

The Examiner states and contends as follows:

11. In response to Applicant's arguments (See pp. 12-16 of Applicant's Paper filed 312212010.) regarding the new spot bonding limitations, it is noted that said new limitations are addressed above.

12. In response to Applicant's arguments (See p. 16, paras. 3-4 of Applicant's Paper filed 312212010.) that Rasmussen (,102) does not teach an array of strands, it is noted that the Examiner concurs.

13. In response to Applicant's arguments (See pp. 16-17 of Applicant's Paper filed 312212010.) that the secondary references do not teach co-extruded strands, but rather reinforcing strands, it is noted that the claims are directed to a product and not a method of making a product. Rasmussen ('102) does teach a co-extruded product while the secondary references teach reinforcing the product with strands.

14. In response to Applicant's arguments (See pp. 17-19, paragraph 10. of Applicant's Paper filed 312212010.) that Lappala's ('389) and the secondary references strands are not co-extruded, it is noted

as discussed above that Rasmussen ('102) teaches a co-extruded product while the secondary references teach reinforcing the product with strands.

15. In response to Applicant's arguments (See pp. 19-20, paragraph 11. of Applicant's Paper filed 312212010.) that Rasmussen ('364) and Velazquez do not teach claim 141 (typographical error?) because they do not teach the bonding pattern, it is noted that Velazquez ('297) is cited for teaching a polyolefin stretch film having bonding layers comprising LLDPE and neither reference is cited for teaching a bonding pattern.

16. In response to Applicant's arguments (See p. 20, paragraph 12. of Applicant's Paper filed 312212010.) that the combined references do not disclose or teach the cross laminate of claim 145, it is noted that no further precise arguments are set forth than discussed above.

17. In response to Applicant's arguments (See pp. 20-21, paragraph 13. of . Applicant's Paper filed 312212010.) that the combined references do not disclose or teach the cross laminate of claim 146 but rather scrims, grids or screens, it is noted that no further precise arguments are set forth than discussed above.

18. In response to Applicant's arguments (See pp. 21-23, of Applicant's Paper filed 312212010.) that respond to the Examiner's arguments in the previous Office action, it is noted that Applicant's arguments have been considered and are substantially the same as discussed above.

19. In response to Applicant's arguments (See p. 22, of Applicant's Paper filed 312212010.) that the number of reference do not support an obviousness rejection, it is noted that there is not a limit on the number of references that can be cited in a rejection.

Applicant has included a table setting forth each claim on a near element by element basis in the first column. In the second column, Applicant has set forth the references used in combination to reject the claims. In the third column, Applicant lists whether that feature is disclose in each reference or not. In the arguments section above, Applicant addresses the combination of the teaching based on the elements present or absence in the references.

As none of the references alone or in any combination does not disclose, teach or even fairly direct an ordinary artisan to form arrays of co-extruded strands on co-extruded films or to form a laminate having a bonding pattern of the present invention, Applicant urges the Examiner to pass this application onto allowance.

Having fully responded to the Examiner's Non-Final Office Action, Applicant respectfully urges that is application be passed onto allowance.

If it would be of assistance in resolving any issues in this application, the Examiner is kindly invited to contact applicant's attorney Robert W. Strozier at 713.977.7000

The Commissioner is authorized to charge or credit Deposit Account 501518 for any additional fees or overpayments.

Respectfully submitted,

Date: **23 August 2010**

/Robert W. Strozier/

Robert W. Strozier, Reg. No. 34,024

Claim	Reference	Disclosed/Not Disclosed
123.(**currently amended**) A cross-laminate comprising:	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389)	cross-laminate not a cross-laminate cross-laminate assumed to be a cross-laminate
a first coextruded film A having a film A main direction of uniaxial or unbalanced biaxial molecular orientation and including:	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389)	film A similarly orientation no film A regardless of orientation no disclosure of orientation no disclosure of orientation
a continuous main layer comprising a first polymer material selected to have a high tensile strength,	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389)	main layer no main layer main layer – Fig. 4 no main layer
a continuous bonding layer comprising a second polymer material and disposed on a first surface of the main layer, and	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389)	bonding layer no bonding layer no bonding layer on the surface, but the films are bonded by an adhesive that embeds the grid no bonding layer on the surface, but the films are bonded by an adhesive that embeds the grid
a plurality of arrays of substantially parallel film A first strands coextruded on a top surface of the bonding layer in a spaced apart configuration, and comprising a third polymer material different from the first and second polymer materials, where a separation between adjacent arrays of film A first strands is between 2mm and 8 cm measured from a middle of one array to a middle of an adjacent array,	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389)	no arrays of co-extruded strands no arrays of co-extruded strands, but a woven or non-woven scrim no arrays of co-extruded strands, but a woven or non-woven grid no arrays of co-extruded strands, but a woven or non-woven grid
a second coextruded film B having a film B main direction of uniaxial or unbalanced biaxial molecular orientation and	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389)	film A similarly orientation no film A regardless of orientation no disclosure of orientation no disclosure of orientation

including:		
a continuous main layer comprising a fourth polymer material selected to have a high tensile strength,	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389)	main layer no main layer main layer – Fig. 4 no main layer
a continuous bonding layer comprising a fifth polymer material and disposed on a first surface of the main layer, and	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389)	bonding layer no bonding layer no bonding layer on the surface, but the films are bonded by an adhesive that embeds the grid no bonding layer on the surface, but the films are bonded by an adhesive that embeds the grid
a plurality of arrays of substantially parallel film B first strands coextruded on a top surface of the bonding layer in a spaced apart configuration, and comprising a sixth polymer material different from the fourth and fifth polymer materials, where a separation between adjacent arrays of film B first strands is between 2 mm and 8 cm measured from a middle of one array to a middle of an adjacent array,	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389)	no arrays of co-extruded strands no arrays of co-extruded strands, but a woven or non-woven scrim no arrays of co-extruded strands, but a woven or non-woven grid no arrays of co-extruded strands, but a woven or non-woven grid
where the film A and the film B are arranged such that the first surface of the film A faces the first surface of the film B and their bonding layers and arrays of strands on the first surfaces face each other and such that the film B main direction crosses the film A main direction and the arrays of the film B first strands cross the arrays of the film A first strands,	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389)	film A and film B are facing, but no arrays of co-extruded strands on either films no films A and B, just a scrim embedded in an adhesive film A and film B are facing, but no arrays of co-extruded strands on either films, just a grid embedded in an adhesive film A and film B are facing, but no arrays of co-extruded strands on either films, just a grid embedded in an adhesive

a first bonding pattern formed between the first surface of the film A and the first surface of the film B comprising:	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389)	bonding pattern – single bond type bonding pattern – two bond types bonding pattern – two bond types bonding pattern – two bond types
first bonds comprising spot-bonds formed directly between the film A first strands and the film B first strands, where the film A first strands intersect the film B first strands,	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389)	no spot bonds at strands intersections no spot bonds at strands intersections no spot bonds at strands intersections no spot bonds at strands intersections
second bonds comprising contact lines between the film A bonding layer and the film B first strands or the film B bonding layer and the film A first strands, and	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389)	no line bonds – no strands no line bonds – scrim is encased in adhesive no line bonds – grid is encased in adhesive no line bonds – grid is encased in adhesive
third bonds comprising contact regions between the film A bonding layer and the film B bonding layer, where the regions are devoid of the film A first strands and the film B first strands,	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389)	region bonds – entire surface no region bonds – adhesive extruded onto the scrim region bonds – entire surface region bonds – entire surface using an adhesive
where the first bonds have a higher bond strength than a bond strength of the third bonds, and	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389)	no first bonds no first bonds no first bonds no first bonds
where the strands have a thickness of no more than 30% of a thickness of their respective films at their thickest.	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389)	no arrays of co-extruded strands no arrays of co-extruded strands no arrays of co-extruded strands no arrays of co-extruded strands
124.(**previously presented**) The cross-laminate according to claim 123, further comprising: an exterior layer formed on an exterior surface of at least the film B comprising an exterior layer polymer material adapted to enhance a surface property of the laminate, where the property is selected from the group consisting of its heat-sealing capability and	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389)	heat sealing layer no disclosure of a heat sealing layer possibly, but not distinct disclosure no disclosure of a heat sealing layer

its frictional property.		
125.(**previously presented**) The cross-laminate according to claim 123, wherein the second bonds have a bond strength greater than the bond strength of the third bonds.	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389)	only on bond type two bond types, but no disclosure of relative strength two bond types, but no disclosure of relative strength two bond types, but no disclosure of relative strength
128.(**previously presented**) The cross-laminate according to claim 123, wherein a collective area of the film A first strands and the film B first strands comprises no more than 60% of a surface area of their respective film sides.	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389) Cederblad et al. (207)	no arrays of co-extruded strands no arrays of co-extruded strands, but a woven or non-woven scrim no arrays of co-extruded strands, but a woven or non-woven grid no arrays of co-extruded strands, but a woven or non-woven grid two different types of strands, one adhesive, one non-adhesive – strand to strand bonding weaker than strand to substrate bonding
129.(**previously presented**) The cross-laminate according to claim 123, wherein a thickness increase of the films A and B at their respective strand locations is at most 20% of a film thickness of the films A and B in adjacent regions of the films A and B devoid of their respective strands.	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389)	no arrays of co-extruded strands no arrays of co-extruded strands, but a woven or non-woven scrim no arrays of co-extruded strands, but a woven or non-woven grid no arrays of co-extruded strands, but a woven or non-woven grid
130.(**previously presented**) The cross-laminate according to claim 123, wherein a thickness increase of the films A and B at their respective strand locations is at most 10% of a film thickness of the films A and B in adjacent regions of the films A and B devoid of their respective strands.	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389)	no arrays of co-extruded strands no arrays of co-extruded strands, but a woven or non-woven scrim no arrays of co-extruded strands, but a woven or non-woven grid no arrays of co-extruded strands, but a woven or non-woven grid
131.(**previously presented**) The cross-laminate according to claim 123, wherein a volume of the film A strands and the film B strands is not greater than 15% of a volume of their respective films.	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389)	no arrays of co-extruded strands no arrays of co-extruded strands, but a woven or non-woven scrim no arrays of co-extruded strands, but a woven or non-woven grid no arrays of co-extruded strands, but a woven or non-woven grid

	Cederblad et al. (207)	two different types of strands, one adhesive, one non-adhesive – strand to strand bonding weaker than strand to substrate bonding
132.(**previously presented**) The cross-laminate according to claim 123, wherein a volume of the film A strands and the film B strands is not greater than 10% of a volume of their respective films.	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389) Cederblad et al. (207)	no arrays of co-extruded strands no arrays of co-extruded strands, but a woven or non-woven scrim no arrays of co-extruded strands, but a woven or non-woven grid no arrays of co-extruded strands, but a woven or non-woven grid two different types of strands, one adhesive, one non-adhesive – strand to strand bonding weaker than strand to substrate bonding
133.(**previously presented**) The cross-laminate according to claim 123, wherein a volume of the film A strands and the film B strands is not greater than 5% of a volume of their respective films.	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389) Cederblad et al. (207)	no arrays of co-extruded strands no arrays of co-extruded strands, but a woven or non-woven scrim no arrays of co-extruded strands, but a woven or non-woven grid no arrays of co-extruded strands, but a woven or non-woven grid two different types of strands, one adhesive, one non-adhesive – strand to strand bonding weaker than strand to substrate bonding
134.(**currently amended**) The cross-laminate according to claim 123, wherein the separation is between 2 mm and 40 mm.	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389) Cederblad et al. (207)	no arrays of co-extruded strands no arrays of co-extruded strands, but a woven or non-woven scrim no arrays of co-extruded strands, but a woven or non-woven grid no arrays of co-extruded strands, but a woven or non-woven grid two different types of strands, one adhesive, one non-adhesive – strand to strand bonding weaker than strand to substrate bonding
135.(**currently amended**) The cross-laminate according to claim 123, wherein the separation is at the highest 20 mm.	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389) Cederblad et al. (207)	no arrays of co-extruded strands no arrays of co-extruded strands, but a woven or non-woven scrim no arrays of co-extruded strands, but a woven or non-woven grid no arrays of co-extruded strands, but a woven or non-woven grid two different types of strands, one adhesive, one non-adhesive – strand to strand bonding weaker than strand to substrate bonding

136.(**previously presented**) The cross-laminate according to claim 123, wherein: the bond strength of the first bonds is at least 40 g cm^{-1}, as measured by a peel test carried out on narrow specimens of the cross-laminate at a velocity of about 1 mm sec^{-1}, and the bond strength of the third bonds are less than or equal to 75% of the bond strength of the first bonds, as measured by the peel test.	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389)	no first bonds no first bonds no first bonds no first bonds
137.(**previously presented**) The cross-laminate according to claim 136, wherein the bond strength of the third bonds are less than or equal to 50% of the bond strength of the first bonds, as measured by the peel test.	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389)	no first bonds no first bonds no first bonds no first bonds
138.(**previously presented**) The cross-laminate according to claim 123, wherein an average melting point of the third polymer material and average melting point of the sixth polymer materials are at least about 10°C lower than an average melting point of the first polymer material and an average melting point of the fourth polymer material.	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389) Cederblad et al. (207)	no strands – no third polymer no main layer – strands have high mp main layer – strands have high mp main layer – strands have high mp no main layer – two different types of strands, one adhesive, one non-adhesive – strand to strand bonding weaker than strand to substrate bonding
139.(**previously presented**) The cross-laminate according to claim 123, wherein an average melting point of the third polymer material and average melting point of the sixth polymer materials are at least about 15°C lower than an average melting point of the first polymer material and an average melting point of the fourth polymer material.	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389) Cederblad et al. (207)	no strands – no third polymer no main layer – strands have high mp main layer – strands have high mp main layer – strands have high mp no main layer – two different types of strands, one adhesive, one non-adhesive – strand to strand bonding weaker than strand to substrate bonding

140.(**previously presented**) The cross-laminate according to claim 123, wherein an average melting point of the third polymer material and average melting point of the sixth polymer materials are at least about 20°C lower than an average melting point of the first polymer material and an average melting point of the fourth polymer material.	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389) Cederblad et al. (207)	no strands – no third polymer no main layer – strands have high mp main layer – strands have high mp main layer – strands have high mp no main layer – two different types of strands, one adhesive, one non-adhesive – strand to strand bonding weaker than strand to substrate bonding
141.(**previously presented**) The cross-laminate according to claim 123, wherein the main layer of each of the two films A and B consists essentially of polyethylene or polypropylene.	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389) Cederblad et al. (207)	same polymers same polymers same polymers one film is PET, one film PE or PP no films
142.(**previously presented**) The cross-laminate according to claim 123, wherein: the main layers are selected from the group consisting of HDPE, LLDPE or a blend of the two, and the bonding layers comprise LLDPE in admixture with 5 - 25% of a copolymer of ethylene having a melting point or a melting range within the temperature range of 50 - 80°C.	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389) Cederblad et al. (207) Rasmussen (364) Velazquez (297)	same no main layer or bonding layer – PE and PP generally main layer, no bonding layer – PE and PP generally main layer, no bonding layer – PE and PP generally no main layer or bonding layer – PE and PP generally three layer structures – same polymers three layer structures – same polymers
143.(**previously presented**) The cross-laminate according to claim 123, wherein the bonding layers include an adhesion modifying material adapted to establish a blocking of the contacting mutually facing surfaces of the films A and B to each other in regions devoid the their strands.	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389)	bonding layers – no mention of modifiers no bonding layers – no mention of modifiers no bonding layer – not mention of modifiers no bonding layer – not mention of modifiers

144.(**previously presented**) The cross-laminate according to claim 123, wherein: at least one of the films A and B further including a plurality of arrays of substantially parallel second strands,	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389)	no arrays of co-extruded second strands no arrays of co-extruded second strands, but a woven or non-woven scrim no arrays of co-extruded second strands, but a woven or non-woven grid no arrays of co-extruded second strands, but a woven or non-woven grid
where the second strands comprise a polymer material differing in composition, color and/or appearance from the first strands and	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389)	no arrays of co-extruded second strands no arrays of co-extruded second strands, but a woven or non-woven scrim no arrays of co-extruded second strands, but a woven or non-woven grid no arrays of co-extruded second strands, but a woven or non-woven grid
where the arrays of first and second strands on the film A or film B are interspersed.	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389)	no arrays of co-extruded first or second strands no arrays of co-extruded first or second strands, but a woven or non-woven scrim no arrays of co-extruded first or second strands, but a woven or non-woven grid no arrays of co-extruded first or second strands, but a woven or non-woven grid
145.(**previously presented**) The cross-laminate according to claim 123, wherein the polymer material of the strands of at least one of the films A and B includes a colored material that makes the colored strands visible through at least one side of the cross-laminate.	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389) Johnston (128)	no arrays of co-extruded strands no arrays of co-extruded strands, but a woven or non-woven scrim no arrays of co-extruded strands, but a woven or non-woven grid no arrays of co-extruded strands, but a woven or non-woven grid no arrays of co-extruded strands, but a woven or non-woven grid
146.(**currently amended**) The cross-laminate according to claim 145, wherein the cross-laminate has a thickness at its highest of about 0.3 mm, and:	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389) Johnston (128)	cross-laminate – no thickness limitations not a cross-laminate – any desired thickness cross-laminate – thickness 0.02 mm up assumed to be a cross-laminate – thicknesses of ≤0.3≥ assumed to be a cross-laminate – no thickness limitation

wherein an exterior surface of the film A is corrugated to form a visible pattern of striations extending in one direction, where a spacing of the striations being at most about 3 mm,	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389) Johnston (128)	no striations on the outer surface of the cross-laminate disclosed no striations on the outer surface of the cross-laminate disclosed no striations on the outer surface of the cross-laminate disclosed no striations on the outer surface of the cross-laminate disclosed no striations on the outer surface of the cross-laminate disclosed
the main layer and the bonding layer of the film A are substantially transparent to enable the colored strands to be visible when the laminate is observed from one of the exterior surfaces of the cross-laminate, and	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389) Johnston (128)	no arrays of co-extruded strands no arrays of co-extruded strands, but a woven or non-woven scrim no arrays of co-extruded strands, but a woven or non-woven grid no arrays of co-extruded strands, but a woven or non-woven grid no arrays of co-extruded strands, but a woven or non-woven grid
a depth of the corrugations is sufficient to impart a three-dimensional effect to the cross-laminate such that the strands appear to be spaced internally from the exterior surface of the film A a distance substantially greater than an actual maximum thickness of the film A.	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389) Johnston (128)	no arrays of co-extruded strands no arrays of co-extruded strands, but a woven or non-woven scrim no arrays of co-extruded strands, but a woven or non-woven grid no arrays of co-extruded strands, but a woven or non-woven grid
147.(**currently amended**) The cross-laminate according to claim 123, wherein the film A further includes:	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389)	cross-laminate not a cross-laminate cross-laminate assumed to be a cross-laminate
a second continuous bonding layer comprising an seventh polymer material and disposed on a second surface of the main layer, and	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389)	bonding layer no bonding layer no bonding layer on the surface, but the films are bonded by an adhesive that embeds the grid no bonding layer on the surface, but the films are bonded by an adhesive that embeds the grid

a plurality of arrays of substantially parallel film A third strands coextruded on a top surface of the second bonding layer in a spaced apart configuration and comprising an eighth polymer material different from the first polymer material and seventh polymer material, and	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389)	no arrays of co-extruded strands no arrays of co-extruded strands, but a woven or non-woven scrim no arrays of co-extruded strands, but a woven or non-woven grid no arrays of co-extruded strands, but a woven or non-woven grid
the cross-laminate further comprising:	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389)	cross-laminate not a cross-laminate cross-laminate assumed to be a cross-laminate
a third film C having a main direction of uniaxial or unbalanced biaxial molecular orientation and including:	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389)	film C no film C film C no film C
a continuous main layer comprising a ninth polymer material having a high tensile strength,	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389)	main layer no main layer main layer – Fig. 4 no main layer
a continuous bonding layer comprising a tenth polymer material and disposed on a first surface of the main layer, and	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389)	bonding layer no bonding layer no bonding layer on the surface, but the films are bonded by an adhesive that embeds the grid no bonding layer on the surface, but the films are bonded by an adhesive that embeds the grid

a plurality of arrays of substantially parallel film C first strands disposed on a top surface of the bonding layer in a spaced apart configuration and comprising an eleventh polymer material different from the ninth and tenth polymer materials,	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389)	no arrays of co-extruded strands no arrays of co-extruded strands, but a woven or non-woven scrim no arrays of co-extruded strands, but a woven or non-woven grid no arrays of co-extruded strands, but a woven or non-woven grid
where the film A and the film C are arranged such that the second surface of the film A faces the first surface of the film C and the second bonding layers of the film A and the bonding layer of film C and the arrays of third strands of the film A and the arrays of strands of the film C face each other and such that the film C main direction crosses the film A main direction and the film C first strands cross the film A third stands,	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389)	film A and film C are facing, but no arrays of co-extruded strands on either films no films A and C, just a scrim embedded in an adhesive film A and film C are facing, but no arrays of co-extruded strands on either films, just a grid embedded in an adhesive film A and film C are facing, but no arrays of co-extruded strands on either films, just a grid embedded in an adhesive
a second bonding pattern formed between the second surface of the film A and first surface of the film C comprising:	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389)	bonding pattern – single bond type bonding pattern – two bond types bonding pattern – two bond types bonding pattern – two bond types
fourth bonds comprising spot-bonds formed directly between the film A third strands and the film C first strands, where the film A first strands intersect the film C first strands,	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389)	no spot bonds at strands intersections no spot bonds at strands intersections no spot bonds at strands intersections no spot bonds at strands intersections

fifth bonds comprising contact lines between the film A bonding layer and the film C first strands or the film C bonding layer and the film A third strands, and	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389)	no line bonds – no strands no line bonds – scrim is encased in adhesive no line bonds – grid is encased in adhesive no line bonds – grid is encased in adhesive
sixth bonds comprising contact regions between the film A bonding layer and the film C bonding layer, where the regions are devoid of the film A third strands and the film C first strands,	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389)	region bonds – entire surface no region bonds – adhesive extruded onto the scrim region bonds – entire surface region bonds – entire surface using an adhesive
where the fourth bonds have a higher bond strength than the sixth bonds.	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389)	no fourth bonds no fourth bonds no fourth bonds no fourth bonds
148.(**previously presented**) The cross-laminate according to claim 147, further comprising: an exterior layer formed on an exterior surface of at least the film B or the film C comprising a polymer material adapted to enhance a surface property of the laminate, where the property is selected from the group consisting of its heat-sealing capability and its frictional property.	Rasmussen (102) Hendrickson (577) Wynne et al. (743) Lappala (389)	heat sealing layer no disclosure of a heat sealing layer possibly, but not distinct disclosure no disclosure of a heat sealing layer